

Title (en)

MICROPOROUS POLYOLEFIN FILM AND PROCESS FOR PRODUCING THE SAME

Title (de)

MIKROPORÖSER POLYOLEFINFILM UND VERFAHREN ZU DESSEN HERSTELLUNG

Title (fr)

FILM MICRO-POREUX DE POLYOLEFINE ET SON PROCEDE DE FABRICATION

Publication

EP 1153969 A4 20020619 (EN)

Application

EP 99969939 A 19990929

Priority

- JP 9905345 W 19990929
- JP 29464198 A 19981001
- JP 29464298 A 19981001

Abstract (en)

[origin: EP1153969A1] The present invention provides a microporous polyolefin membrane of high permeability and novel structure, and also provides a method of producing the same, wherein its average pore size is gradually decreases from at least one membrane surface towards its center. The method of producing the microporous polyolefin membrane comprises the steps of extruding the solution, composed of 10 to 50 weight % of (A) a polyolefin having a weight-average molecular weight of 5x10⁵ or more or (B) a composition containing this polyolefin and 50 to 90 weight % of a solvent, into a gel-like formed article and removing the solvent therefrom, wherein a treatment step with a hot solvent is incorporated.

IPC 1-7

C08J 9/28; H01M 2/16; B01D 71/26

IPC 8 full level

B01D 67/00 (2006.01); **B01D 71/26** (2006.01); **H01M 50/417** (2021.01); **H01M 50/489** (2021.01); **H01M 50/491** (2021.01); **H01M 50/494** (2021.01)

CPC (source: EP KR US)

B01D 67/0027 (2013.01 - EP US); **B01D 67/003** (2013.01 - EP US); **B01D 69/02** (2013.01 - EP US); **B01D 71/26** (2013.01 - EP); **B01D 71/261** (2022.08 - US); **B01D 71/262** (2022.08 - US); **B29C 48/08** (2019.02 - EP US); **B29C 48/832** (2019.02 - EP US); **B29C 48/865** (2019.02 - EP US); **B29C 48/914** (2019.02 - EP US); **C08J 9/28** (2013.01 - KR); **H01M 50/417** (2021.01 - EP KR US); **H01M 50/489** (2021.01 - EP KR US); **H01M 50/491** (2021.01 - EP KR US); **H01M 50/494** (2021.01 - EP KR US); **B01D 2323/12** (2013.01 - EP US); **B01D 2325/023** (2013.01 - EP US); **B01D 2325/34** (2013.01 - EP US); **Y02E 60/10** (2013.01 - EP); **Y10T 428/24942** (2015.01 - EP US)

Citation (search report)

- [A] US 4840733 A 19890620 - SASAKI JUN [JP], et al
- [A] EP 0481517 A1 19920422 - DAINIPPON INK & CHEMICALS [JP]
- [A] EP 0476198 A1 19920325 - TONEN CORP [JP]
- [A] PATENT ABSTRACTS OF JAPAN vol. 010, no. 172 (C - 354) 18 June 1986 (1986-06-18)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 11 30 September 1998 (1998-09-30)
- See also references of WO 0020493A1

Cited by

EP1487046A1; EP2458660A4; EP1661943A4; EP2463331A4; CN107709622A; CN110960995A; EP2777913A1; EP2036699A1; EP4143139A4; US8758887B2; EP3124526A4; EP3409346A4; US9680142B2; CN102341160A; CN102355937A; EP1873194A4; WO2009084719A1; US10799837B2; US9660290B2; US10326121B2; US11482759B2

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 1153969 A1 20011114; EP 1153969 A4 20020619; EP 1153969 B1 20040225; DE 69915132 D1 20040401; DE 69915132 T2 20041209; JP 2010059436 A 20100318; JP 4494638 B2 20100630; JP 4997278 B2 20120808; KR 100550354 B1 20060209; KR 20010079905 A 20010822; TW 460510 B 20011021; US 2005098913 A1 20050512; US 2009098449 A1 20090416; US 6666969 B1 20031223; US 7479243 B2 20090120; US 7815825 B2 20101019; WO 0020493 A1 20000413

DOCDB simple family (application)

EP 99969939 A 19990929; DE 69915132 T 19990929; JP 2000574599 A 19990929; JP 2009276549 A 20091204; JP 9905345 W 19990929; KR 20017003690 A 20010322; TW 88116874 A 19990930; US 31460208 A 20081212; US 64973203 A 20030828; US 80630801 A 20010820